



Principal Investigator Grant

Project

Gilles Allali:

“A Spotlight on Women’s Brain Health: Investigating Tauopathies in Alzheimer’s Disease through Brain Connectivity Mapping”

Granted amount	CHF 283'500
Starting date	1.10.2024
Duration	36 months



Main applicant

Prof. Gilles Allali
Leenaards Memory Center
Lausanne University Hospital (CHUV)
& University of Lausanne (UNIL)
Chemin de Mont-Paisible 16
1011 Lausanne

Women’s brain health in the spotlight

Alzheimer’s disease (AD) takes a heavier toll on women than men. Women are at higher risk of developing AD, they face faster cognitive decline and seems less responsive to recently approved disease-modifying therapy than men. Different rates of Tau protein accumulation in the brain may explain these sex-related differences. Tau accumulation closely mirrors symptoms and is faster in women than men, but the underlying reasons are unknown. Tau spreading is conveyed by the underlying brain connectivity network, a dimension that is highly specific to individual subjects and is modulated by sex and sex-specific factors including hormone exposure.

This study aims to understand whether sex-related differences in brain connectivity architecture confer women a higher vulnerability to tau spreading and clinical decline than men, and clarify how these mechanisms are influenced by sex-related factors including age at menopause and number of childbirths.

The study will also investigate whether comorbid pathologies including cerebral amyloid angiopathy, which occurs in half of AD patients and could have higher prevalence in women, accelerate Tau spreading through brain circuits’ overlaps. The results will be crucial for models of female brain aging and for guiding the development of sex-aware care management approaches, including determining eligibility for anti-amyloid treatment.